Name and brief description of initiative:
NIH Neuroscience Information Framework (initiative under the NIH Neuroscience Blueprint)

Brief description of goals of initiative:
Under a contract to Weill Medical College of Cornell University, Dr. Dan Gardner has assembled -- in partnership with the Society of Neuroscience -- a diverse and dedicated team of prominent neuroscientists to implement this initiative. Through this national collaborative effort, team members working at fourteen different sites will focus their collective expertise, tools, and energy to develop a publicly accessible inventory that will enable neuroscientists working on diverse problems to become acquainted with the full spectrum of resources available. The inventory will be structured so that users can locate, relate, access, integrate and analyze entities to determine those most relevant to their interests. A key goal of this initiative is to establish a framework which enables users to make concept-based queries of the inventory which will contain information across multiple biological scales and functions. This effort represents a critical step in accelerating progress in neuroscience research through advancing information access and integration among the varied membership of the broad neuroscience research community.

Principal investigator: Dr. Daniel Gardner, Weill Medical College, Cornell University

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Website address of initiative: http:neurogateway.org

Brief description of biomedical informatics and computational biology components and their goals:
The project is exploring a number of tools and approaches for identifying and accessing resources relevant to neuroscience research. Phase I of the project which involves inventory development and preparation of a white paper characterizing the inventory and proposing a framework also includes exploration of particular tools. One of these includes development of a "Textpresso Tool for Neuroscience" (see http://www.textpresso.org/) and a use case involving the creation of a digital inventory of all three-dimensional reconstructions of nerve cells available in the neuroscience community. The resulting database will eventually allow researchers to mine and extract valuable information on the nerve cells, essentially serving as a central resource of nerve cell data that will allow for valuable scientific insights on aging and disease states. (see http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Abstract&list_uids=16552417 and http://gazette.gmu.edu/articles/7962/)

Brief description of resources and tools available for sharing:

To serve the broad field of neuroscience and maximize the utility of the work, Framework development conforms to the following open standards: Open data, open exchange, and open analysis -- via open source and open platform -- towards open discovery for neuroscience

Brief description of integrative efforts:

Standard ontologies/terminologies: A significant component of Framework development is the assembling of consensus descriptive terminologies for neuroscience research. These are intended to be used by the Framework project to characterize and to query neuroscience data, neuroscience databases, and other web resources. In the future, such terminologies may aid the development of ontologies for neuroscience and linked areas of biomedicine. For topic areas being addressed, see this link: http://neurogateway.org/catalog/goto.do?page=.terminology

Interactions with other initiatives: Towards this effort, we project coordination with other standards efforts, including the new International Neuroinformatics Coordinating Facility, evolving Society for Neuroscience data sharing best practices, the Human Brain Project Structural and Functional Imaging working group, and related neuroinformatic activities globally. Several participants from the BIRN project are heavily involved with this activity as well. Neuroscientists wishing to identify publicly available, national and international research activities, tools, resources and databases to be considered for inclusion in the inventory are encouraged to submit their suggestions under the subject heading "Blueprint Inventory" to Dr. Daniel Gardner, the PI, via email at the following address: dan@aplysia.med.cornell.edu

Opportunities for collaboration or synergy with the NCBCs: Interactions on development and adoption of terminologies and ontologies; sharing of approaches for developing catalogs and inventories including NCBC software and other resource directories and "yellow pages;" shared interest in approaches for resource identification; including NCBC tools and resources in the NIF inventory; possible interest in NLP approaches; applications of atlases as interfaces for information identification.

Prepared by K.Skinner 05/10/2006